

WHAT IS CLAIMED IS:

1. An imaging apparatus for picking-up a subject image formed by a imaging optical unit, comprising:

an image pickup device for photoelectrically converting the subject image;

a memory for storing gamma property data of said image pickup device and light quantity distribution data of incident light in accordance with pixel positions on the image pickup device; and

a correcting circuit for correcting image signals outputted from each pixel of the image pickup device based on the gamma property data and light quantity distribution data that are stored in said memory.

2. An imaging apparatus according to Claim 1, wherein

the correcting circuit determines incident light quantity for each pixel based on the image signals outputted from each pixel and the gamma property data stored in the memory, corrects the incident light quantity based on the light quantity distribution data stored in the memory, and generates corrected image signals in accordance with the corrected incident light quantity.

3. An imaging apparatus according to Claim 1, wherein

the memory also stores light receiving ratio distribution data in accordance with pixel positions on the image pickup device, and

the correcting circuit corrects the image signals outputted from each pixel based on the gamma property data, light quantity distribution data, and light receiving ratio distribution data that are in the memory.

4. An imaging apparatus according to Claim 3, wherein

the correcting circuit determines incident light quantity for each pixel based on the image signals outputted from each pixel and gamma property data stored in the memory, corrects the determined incident light quantity based on the light quantity distribution data and light receiving ratio distribution data, and generates corrected image signals in accordance with the corrected incident light quantity.

5. An imaging apparatus according to Claim 1, further comprising:

a detecting circuit for detecting the condition of the shooting optical unit, wherein

the correcting circuit corrects image signals based on light quantity distribution data in accordance with the condition of the imaging optical unit detected by said detecting circuit in the light quantity distribution data stored in the memory.

6. An imaging apparatus according to Claim 5, wherein

the condition of the imaging optical unit to be detected by the detecting circuit includes at least one of the zooming condition, focusing condition, and stop

condition.

7. An imaging apparatus according to Claim 1, further comprising:

an image recording circuit for recording the image signals corrected by the correcting circuit.

8. An imaging apparatus according to Claim 1, further comprising:

an image display device for displaying images obtained by the image signals corrected by the correcting circuit.

9. An imaging optical unit which can be detachably mounted to an imaging apparatus having an image pickup device for photoelectrically converting a subject image, and forms a subject image on the image pickup device, comprising:

a memory for storing light quantity distribution data of incident light in accordance with pixel positions on the image pickup device; and

a communications terminal for transmitting the light quantity distribution data stored in the memory to the imaging apparatus.

10. An imaging system provided with an imaging apparatus having an image pickup device for photoelectrically converting a subject image and an imaging optical unit that can be detachably mounted to the imaging apparatus and forms a subject image on the image pickup device, comprising:

an optical unit side memory provided in the imaging

optical unit, where the optical unit side memory stores light quantity distribution data of incident light in accordance with pixel positions on the image pickup device;

a communications terminal for data communications between the imaging apparatus and the imaging optical unit;

an imaging apparatus side memory provided in the imaging apparatus, where the imaging apparatus side memory stores gamma property data of the image pickup device; and

a correcting circuit provided in the imaging apparatus, where the correcting circuit corrects image signals outputted from each pixel of the image pickup device based on the gamma property data stored in the imaging apparatus side memory and the light quantity distribution data that is stored in the optical unit side memory and received from the imaging optical unit via the communications terminal.

11. An imaging system according to Claim 10, wherein

the correcting circuit determines incident light quantity for each pixel based on the image signals outputted from each pixel and gamma property data stored in the imaging apparatus side memory, corrects the determined incident light quantity based on the light quantity distribution data stored in the optical unit side memory, and generates corrected image signals in accordance with the corrected incident light quantity.

12. An imaging system according to Claim 10, wherein

the imaging apparatus side memory also stores light receiving ratio distribution data in accordance with pixel positions on the image pickup device, and

the correcting circuit corrects the image signals outputted from each pixel based on the gamma property data, light quantity distribution data, and light receiving ratio distribution data.

13. An imaging system according to Claim 12, wherein

the correcting circuit determines incident light quantity for each pixel based on the image signals outputted from each pixel and gamma property data, corrects the determined incident light quantity based on the light quantity distribution data and light receiving ratio distribution data, and generates corrected image signals in accordance with the corrected incident light quantity.

14. An imaging system according to Claim 10, wherein

the imaging optical unit further has a detecting circuit for detecting the condition of the imaging optical unit, wherein

the correcting circuit receives light quantity distribution data in accordance with the condition of the imaging optical unit detected by the detecting circuit in the light quantity distribution data stored in the optical unit side memory from the imaging optical unit via the communications terminal, and corrects the image signals

based on the received light quantity distribution data.

15. An imaging system according to Claim 14, wherein

the condition of the imaging optical unit to be detected by the detecting circuit includes at least one of the zooming condition, focusing condition, and stop condition.

16. An imaging system according to Claim 10, wherein

the imaging apparatus has an image recording part for recording the image signals corrected by the correcting circuit.

17. An imaging system according to Claim 10, wherein

the imaging apparatus has an imaging display device for displaying images obtained by the image signals corrected by the correcting circuit.